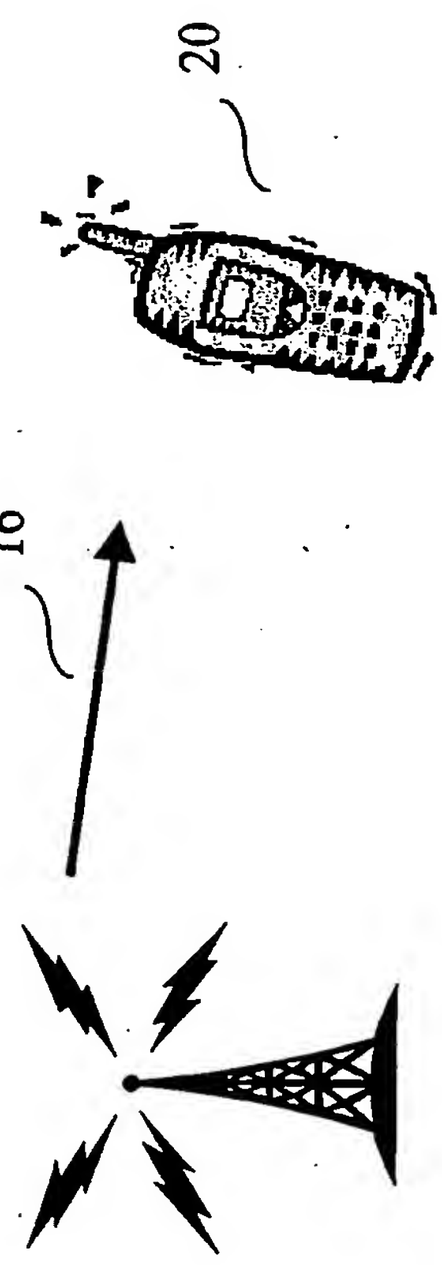
FIG. 1



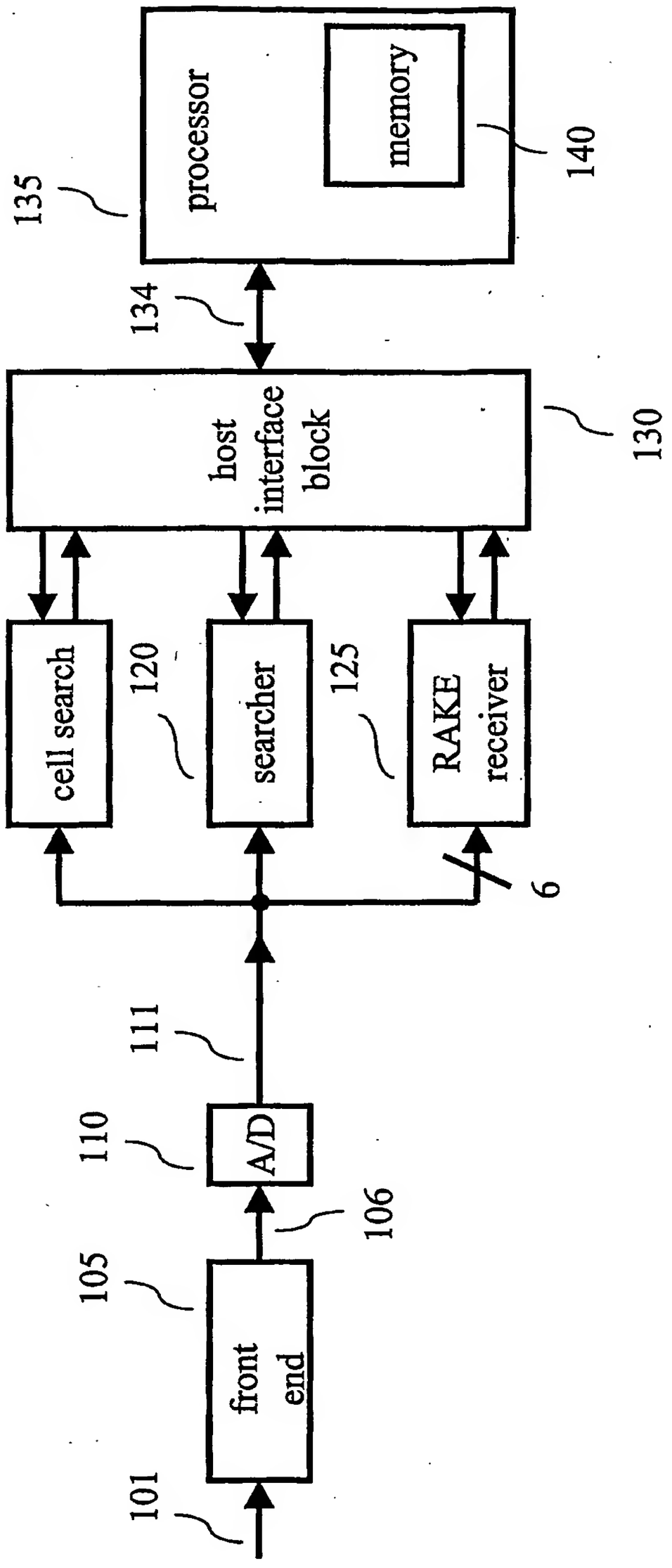

processor
memory
135
140
134
host interface block
130
cell search
115
searcher
120
RAKE receiver
125
6
111
A/D
110
106
front end
105
101

FIG. 2

FIG. 3

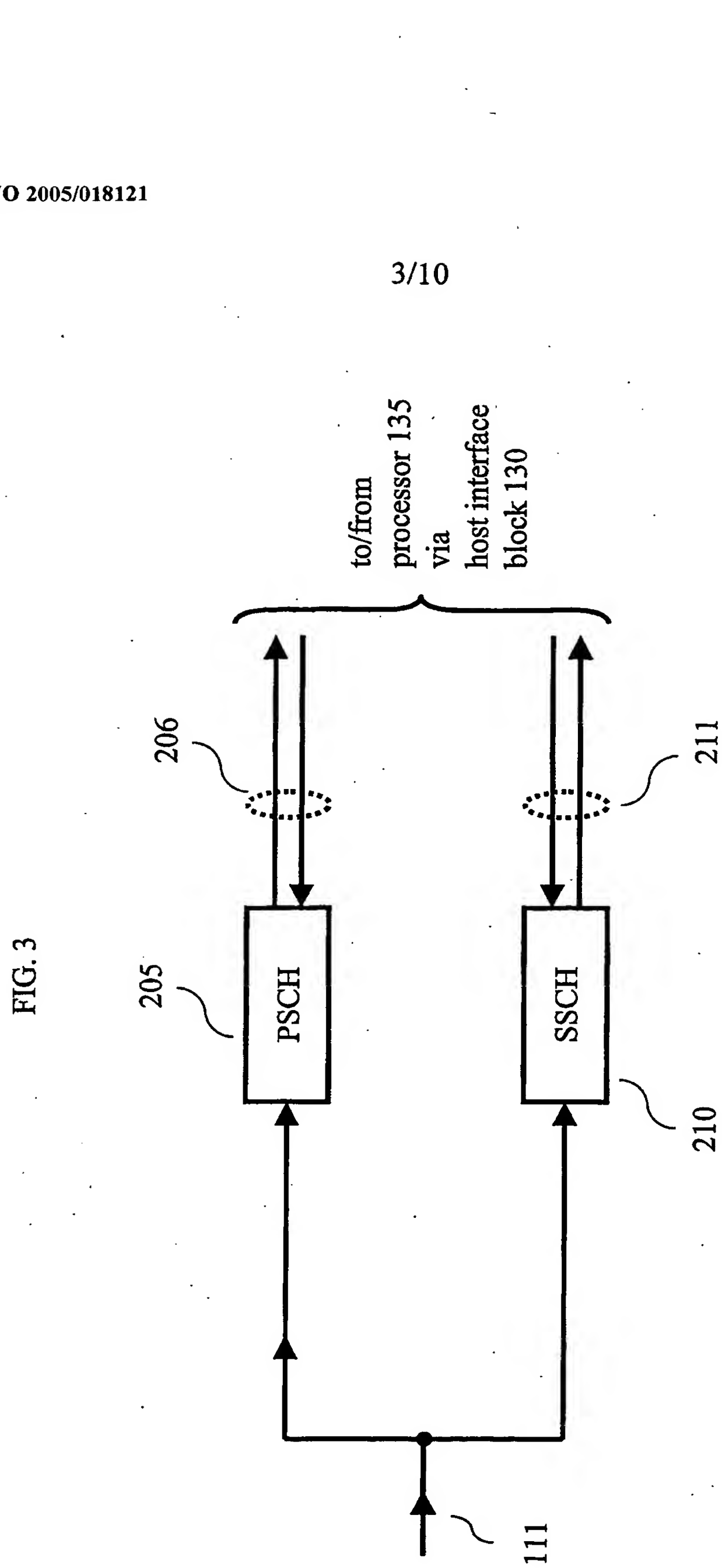

to/from
processor 135
via
host interface
block 130
206
205
PSCH
211
SSCH
210
111
115

FIG. 4

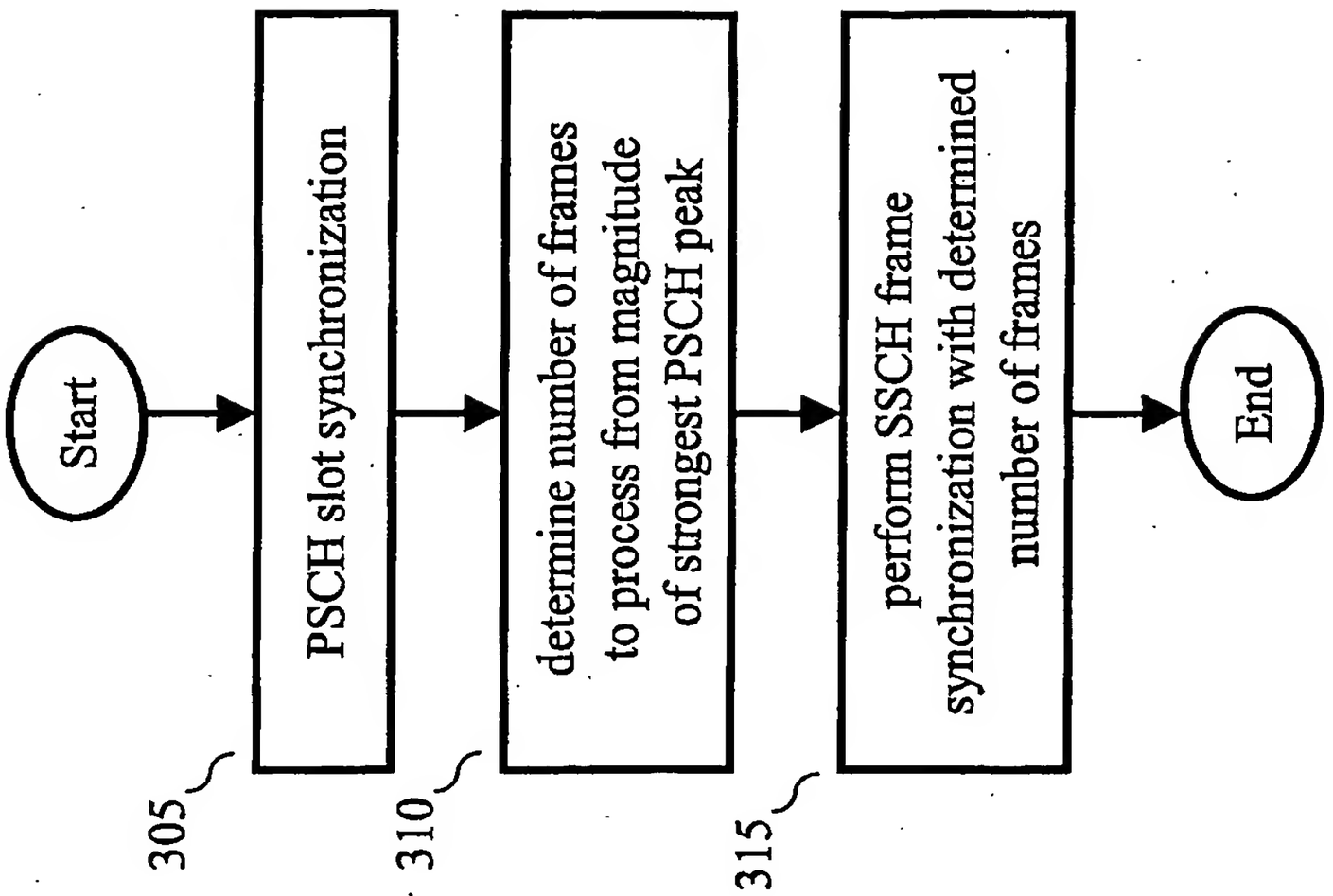

Start
PSCH slot synchronization
305
determine number of frames to process from magnitude of strongest PSCH peak
310
perform SSCH frame synchronization with determined number of frames
315
End

FIG. 5

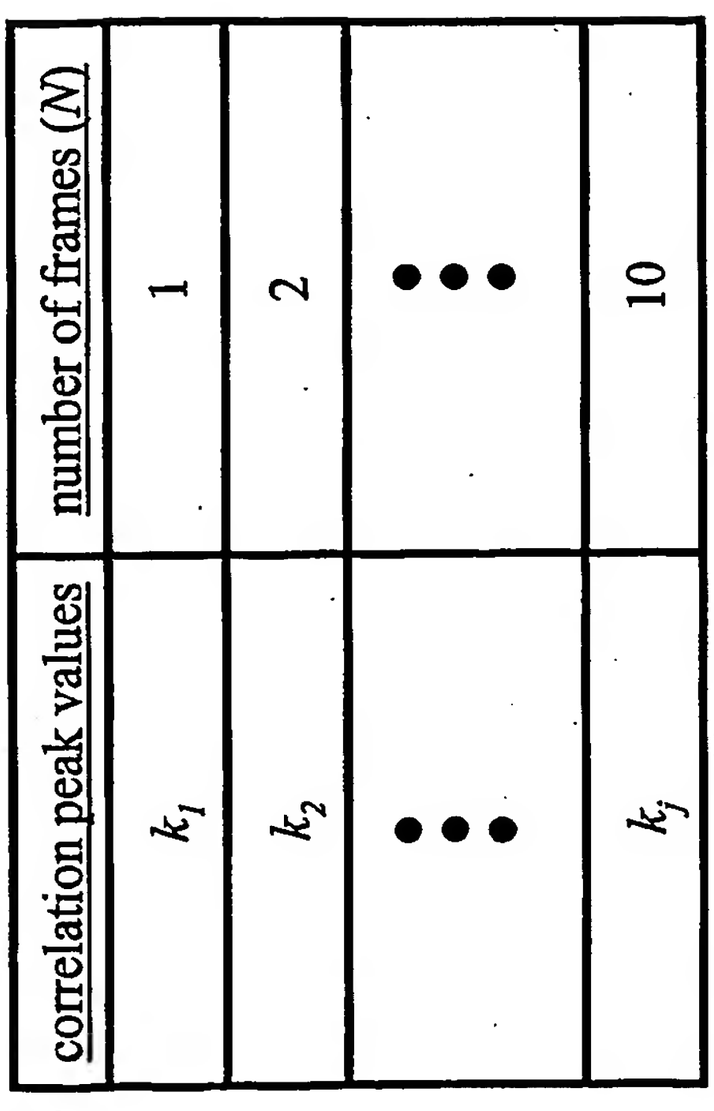


FIG. 6

```
// determine code group and frame offset
err = 100000;                                   // initially set error to large value
// compare buffer against all possible code groups
for (i=0;i<64;i++)
{
        // compare against all 15 possible shifts of code
        for (k=0;k<15;k++)
        {
                current_err = 0;        // reset to zero
                for (j=0;j<15;j++)
                {
                        current_err += abs(peak_idx_buff[j] - code_groups[i][(j+k) % 15] );
                }
                // check if closer than previous comparison
                if (current_err < err)
                {
                        err = current_err;      // set new error value for comparison
                        code_group = i;         // current estimate of scrambling code group
                        offset = k;             // current estimate of offset measured in slots
                }
        }
}
```

FIG. 7

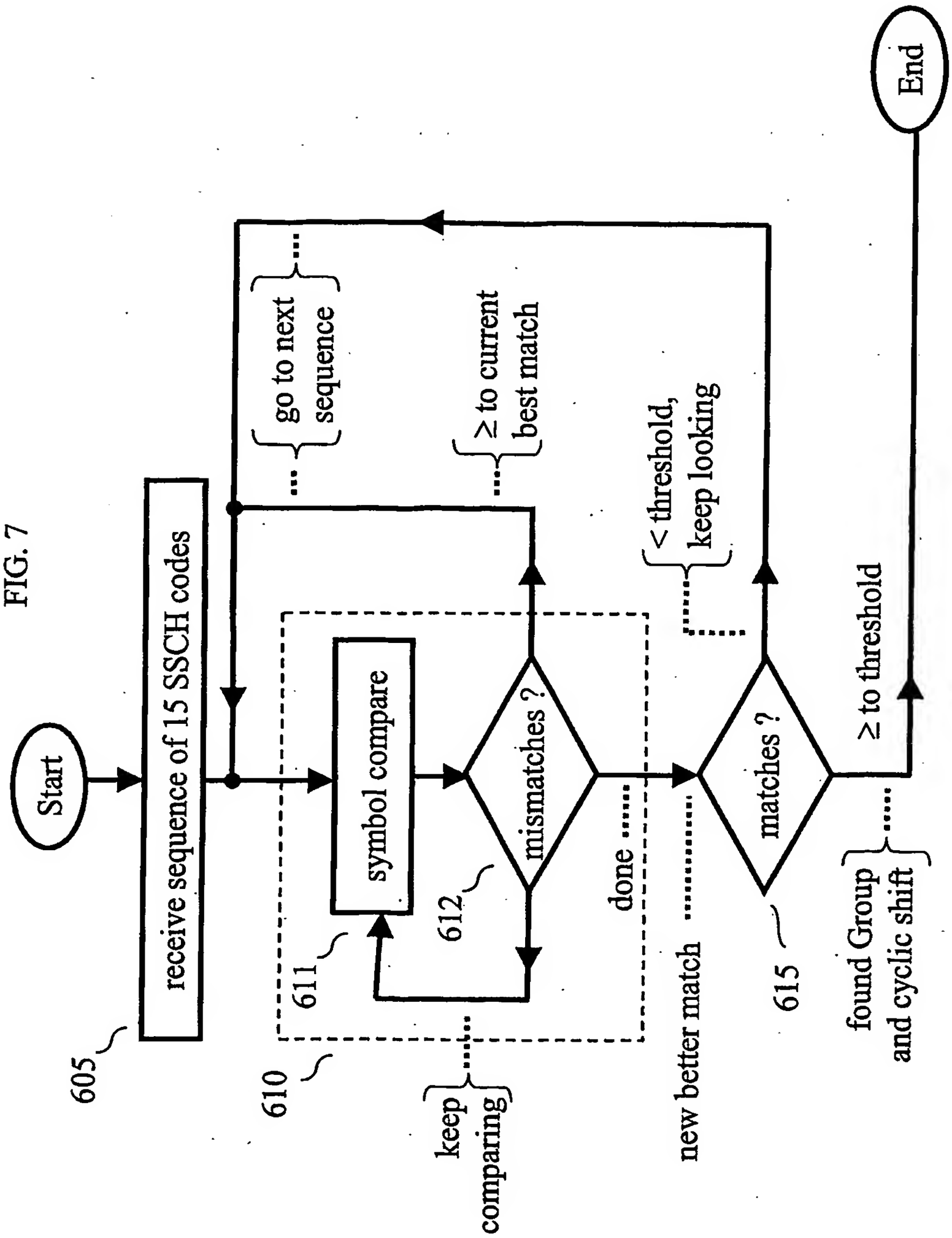

Start
receive sequence of 15 SSCH codes
605
symbol compare
611
612
610
mismatches ?
keep comparing
done
new better match
matches ?
615
≥ to threshold
found Group and cyclic shift
End
go to next sequence
≥ to current best match
< threshold, keep looking

FIG. 8

```
match = 0;                          // initial values
mismatch = 15;
for (i=0;i<64;i++)                  // compare buffer against all possible code groups
    {for (k=0;k<15;k++)             // compare against all 15 possible shifts of code
        {current_mismatch = 0;
         for (j=0;j<15;j++)
            {if (peak_idx_buff[j] != code_groups[i][(j+k) % 15])
                {
                 current_mismatch++;
                }
             if (current_mismatch == mismatch)   // same number of errors as current best match
                {
                 j = 15;                         // force out of FOR loop
                }
            }
        if (current_mismatch == 0)               // check if perfect match found
                {code_group = i;                 // current estimate of scrambling code group
                 offset = k;                     // current estimate of offset measured in slots
                 j = 15;  k = 15;  i = 64;}
        else if (current_mismatch < mismatch)
                {mismatch = current_mismatch;
                 code_group = i;
                 offset = k;}
        }
}
```

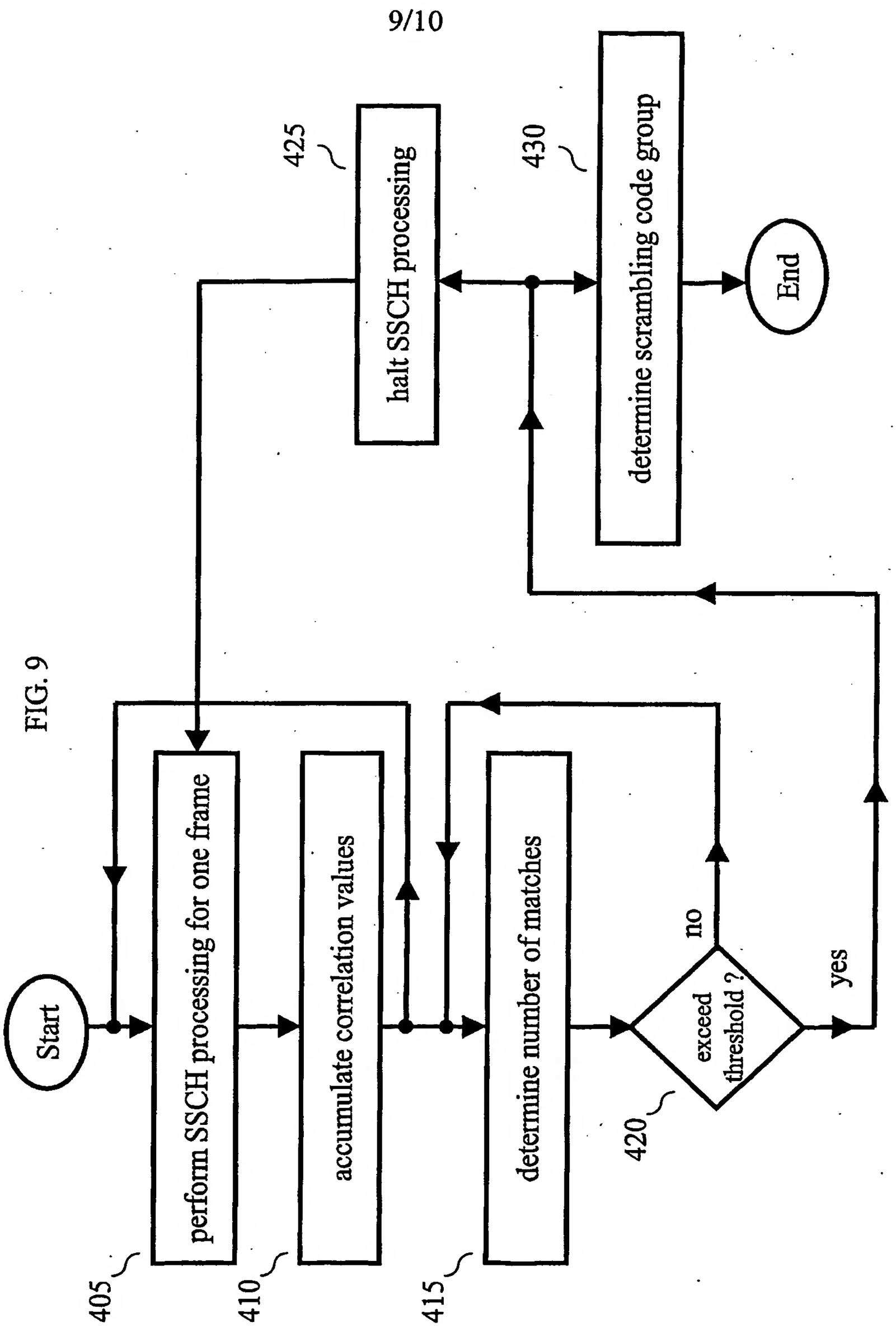

Start
perform SSCH processing for one frame
405
accumulate correlation values
410
determine number of matches
415
exceed threshold ?
420
no
yes
halt SSCH processing
425
determine scrambling code group
430
End

FIG. 9

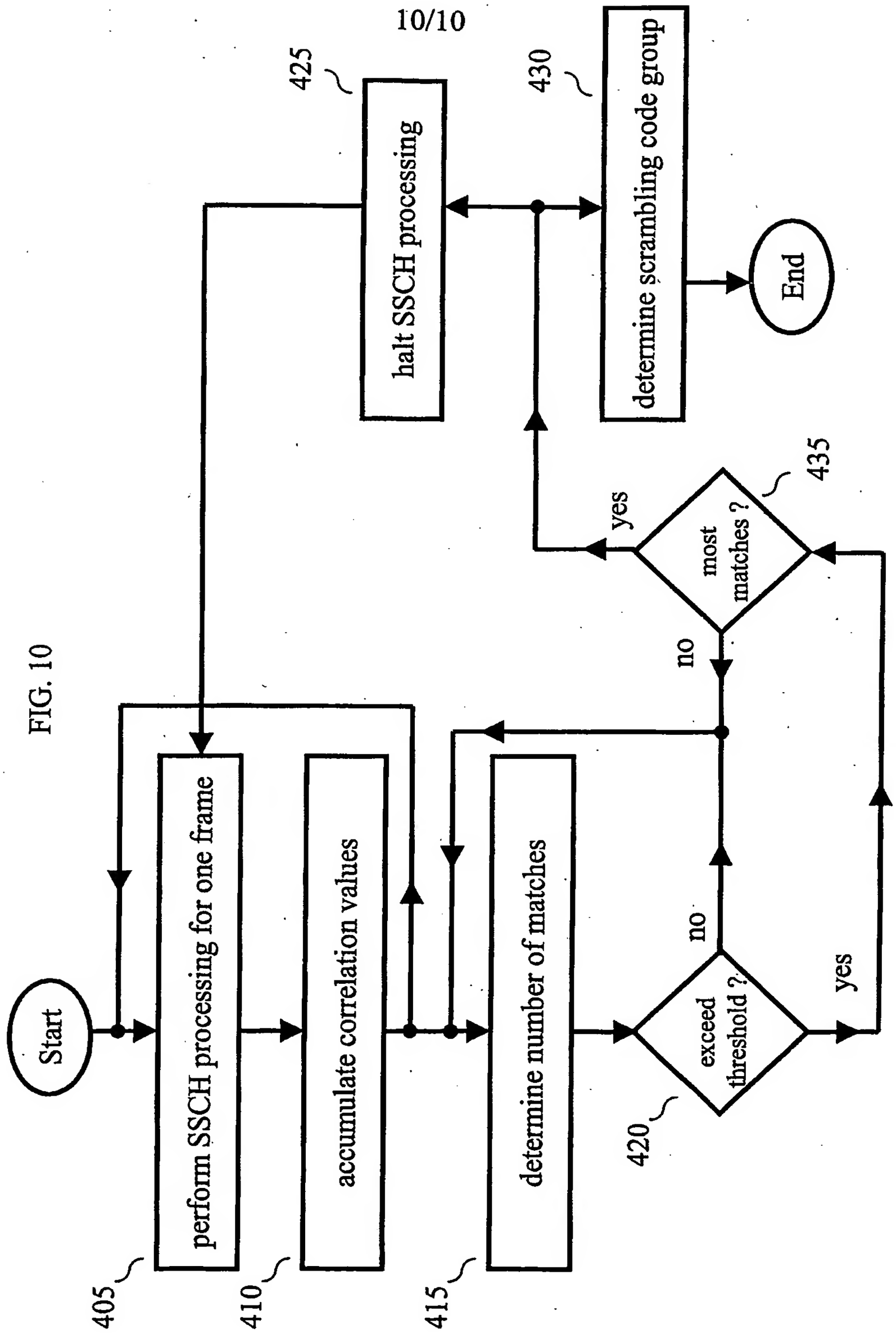

Start
perform SSCH processing for one frame
405
accumulate correlation values
410
determine number of matches
415
exceed threshold ?
420
no
yes
most matches ?
435
no
yes
halt SSCH processing
425
determine scrambling code group
430
End

FIG. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/24348

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04J 3/06; H04B 1/60, 7/216; H04Q 7/00
US CL : 370/513, 514, 331, 332, 342, 335; 455/500, 502, 9

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 370/513, 514, 331, 332, 342, 335; 455/500, 502, 9

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 2004/0022273 A1 (JO ET AL.0 05 FEBRUARY 2004, PAGE 2, [0022] [0023] [0024].	1-20
X, P	US 2003/0236098 A1 (HAYOUN0) PAGE 2, [0039] [0040] [0041] [0042] [0043].	1-20
A	US 2003/0081571 A1 (HUR) 01 MAY 2003, PAGE 2, [0022].	1-20
A	US 2002/0064146 A1 (OKUYAMA) 30 MAY 2002, PAGE 3, [0044] [0049] [0050] [0051] [0052].	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
28 June 2004 (28.06.2004)	20 JUL 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Wellington Chin Telephone No. (703) 305-3900

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